

# Mobile Application for Post Childbirth Services (MPCB)

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**Abstract**— Health care service are easily available in the cities, however people in the rural area to far from hospitals and clinic woman who have just given birth potentially, is one of the most sensitive case in healthcare field. The health workers have to go to the rural areas to give health service as well as to collect information about the mothers and baby after post-delivery manually. In this way of collecting and how ever the information the staff spends the time and the effort to go far to rural areas. The aim of this project to develop mobile application to the process of data Collection, retrieve and update enable health worker to collect information from mothers in rural areas the process of data collection, update record as well as provide information to the mother are while they provide the service during their visits. This system create for identify the user requirement for care of post-delivery application and also develop the prototype based on the requirement gathered and finally to evaluate the user acceptance by focusing on the functionality of the system. On the other hand this system create for gathering, retrieving data about mothers and baby after post-delivery by nurses in kkj (klinik kesihatan jitra ). Finally this system playing major role in improving the performance of accessibility to the data inside the system and also retrieving data become easy. The concern is not about rural areas .it is how the nurses want to keep track with the record /data about the baby after the mother has delivered.

**Index Terms**— mobile application for post childbirth services

## I. INTRODUCTION

During the last three decades of development medical technology has been the main engine that has driven the spectacular advances in our ability to diagnose and treat many human ailments. This has reduced mortality and morbidity for thousands (Saha,1995). Medical costs paid by the governments grow so rapidly that it will be necessary to reduce other areas of cotmtry spending (including national defense) to the "bare bones" levels (Gover, 2000).Information technology plays a major role in every field of modern development and is an essential tool in health care. Mobile technology has offered an opportunity to provide a new generation of people with the means to interact with activities irrespective of location. With the speedy development of mobile communication and wireless technologies, business activities will break away from the limitation of region and time step by step, which bring the continuous influences on organizations (Lihua, 2005). Mobile computing applications allow an anytime, anywhere access to the Internet and Corporate intranets.

According to Bryan (1989), causes of the crisis in health care delivery in rural communities include:

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1. Requiring care and care system. Characteristics of the rural population
2. The failure of the federal Medicare program to reimburse hospital and physician providers at rates approaching true costs.
3. Insufficient compensation for large numbers of patients without insurance or coverage under the Federal / State Medicare program
4. Huge increases in professional liability insurance costs for hospitals, clinics, physicians, and mid-level providers.
5. Staffing shortages, especially of nurses and allied health technologists.
6. Lack or loss of physicians.
7. Changes in rural medical practice to avoid services with high liability. requirements and costs, e.g. obstetrics, and high technical requirements and costs, e.g. surgery, trauma, orthopedics, and the trend to conduct more diagnosis and treatment in ambulatory settings.
8. The increasing inability of rural hospitals to maintain staffs, instrumentation, and facilities commonly available in larger urban hospitals.
9. Professional and institutional isolation, making shared services, continuing and in-service education and consultative support unavailable or difficult to acquire.
10. Difficulty in meeting accreditation requirements, or requirements for Medicare or Medicaid reimbursement.

## II. PROBLEM STATEMENT

The staff of the clinic or hospital face many problems With accessing, collecting, retrieving data about the mothers and baby after delivery for example (Date, Blood pressure, Body temperature...etc) especially when the mother and baby live so far away from the hospital or the clinic such as rural area, of this clinic, they usually have to go to these areas and collect the information manually. In this Way of collecting information the staff spends much effort and time According to Klinik Kesihatan Jitra the meeting with Sn MIRS Anis Azliza BT Abd .Rani and PHN Madam Roseline J oserph, the (nurses).They visit houses to check mothers and fetus after deliveiy they face many problems like try to get the medical information from cards in manual Way. Some times cards get damaged and it's hard for them to hold PC or lap top. The same time if they want retrieve data about mothers it need long time and hard efforts thus this project will propose WAP application model in mothers and baby management system for nurses to collecting the information for the rural patients (mothers, baby).

Mobile application system have many difficult to accesses services to the user on the other hand it not easy to make this application usable by the users and compatible with there

needs which include accessing, gathering, retrieving data about mothers and baby .

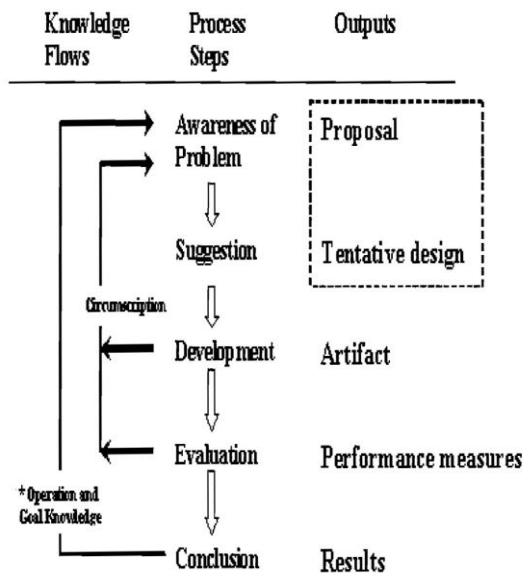
## Research Objectives

- To identify the user requirements for care of post delivery mother and baby application in (Klinik Kesihatan Jitra)
- To develop the prototype the based on the requirement gathered
- To evaluate the user acceptance by checking the functionality of the system.

## III. METHODOLOGY

### The General Methodology of Design Research

In this project, the General Methodology of Design Research will use. This methodology consists of five standard phases as bellow



The General Methodology of Design Research (Vaishnavi & Kuechler, 2004)

### Awareness of Problem

At this first stage, certain level of awareness is acquired through interview with expert people and readings in order to gain understanding of the problem which needs to be solved, and the diversity or complexity of the problem as well as the scope of this study. For this study the design of prototype will be made for WAP application. Therefore, this study will lead to the development of the prototype for WAP application system. To identify the problem and to collect the user requirements the interview with hospital staff and patients will made. After the problems are identified ,the objectives and significance of the study are defined clearly after that. completing this phase, the output of this phase is a proposal for a new research effort. And we see that very Cleary according to the first interview with the staff nurses in (Klinik Kesihatan Jitra) and try to talk with Sn MIRS Anis Azliza BT Abd.Rani and PHN Madam Roseline Joserph to know more implementation about the problems they face during

collecting the data related to mothers in rural area and recognize this problem.

### Suggestion

Many approaches to the problem of this project were looked into with the view of selecting the best suggestion or approach for the accomplishment of this task. These are discussed over a period of months. Some of the alternatives that were discussed were development of a new system. Thus, this study, will present a prototype using a web application to offer communicate between computer department and the students, and proper evaluation on the performance of the prototype will be carried out. The sample data about the patient's information is obtained from the hospital.

In this stage we make contact with the staff and get all the requirement and data they want to collect.

### Development

The Tentative Design is implemented in this phase. The techniques for implementation will of course vary depending on the artifact to be constructed. The implementation itself can be very pedestrian and need not involve novelty beyond the state-of-practice for the given artifact; the novelty is primarily in the design, not the construction of the artifact. For this project, a step by step architectural approach is followed in building the prototype. In this stage we try to show the main structure of the program by identify the data base and building the prototype.

### Evaluation

The evaluation will perform to determine the accuracy of the system. Evaluation is done according to criteria that are always implicit and frequently made explicit in the awareness phase. If there is any deviation, then it will be explained. The evaluation phase results and additional information gained in the construction and running of the artifact are brought together and fed back to another round of Suggestion. The explanatory hypotheses, which are quite broad, are rarely discarded, but rather are modified to be in accord with the new observations. In a sense evaluation takes place continuously in a design process (research or otherwise) since a large number of "micro-evaluations" take place at every design detail decision. Each decision is followed by a "thought experiment" in which that part of the design is mentally exercised by the designer.

On this level we constraint on the functionality of the user acceptance model according to the model used in this research project had been conducted by Gaffney to evaluate applications and web-businesses (Gaffney, 1998).

Therefore the evaluation of this system will be elaborated in detail in the subsequent chapter of findings and result. However in order to test the conceptual design, various operating environments will model and "hand-stepped" through the execution rules to determine that logically correct system behavior occurred at appropriate times In this stage the main function is to make testing for the system and try to measure the reliability and usability for it.

## IV. CONCLUSION

This phase is the finale of a specific research effort. The design has been made and linked with prototype. The project

included functionality testing and report written. Documentation also prepared. Typically, it is the result of satisfying, that is, though there are still deviations in the behavior of the artifacts from the (multiply) revised hypothetical predictions, the results are considered good. Not only are the results of the effort consolidated and “written up” at this phase, but the knowledge gained in the effort is frequently categorized as either “firm” - facts that have been learned and can be repeatable applied or behavior that can be repeatable invoked - or as “loose ends” anomalous behavior that defies explanation and may well serve as the subject of further research.

## V. SYSTEM ANALYSES AND DESIGN

### Analysis Phase

In analyses user requirements are modeled for What the system must do. in the object oriented life cycle ,the output of this process is conceptual level analyses models (Brown ,2002;Marakas,2001 ,Marakas,2006).

### Interviews

According to the meeting with Sn MIRS Anis Azliza Bt Abd.Rani and PHN Madam Roseline Joseph the staff (nurses) they visit houses to check mothers and fetus after post delivery they face many problems like holding many heavy folder and files, sometimes folders can spoiling and its hard for them to hold PC or lap top the same time the accessibility for accessing gathering and retrieving data about mothers and fetus it is need long time to found the files and access to them and hard hi efforts also to Write manually . Thus this project will propose WAP application model to improve the accessibility of collecting and retrieving the information for the rural patients.

### Functions:

- \* To provide good registration and retrieve of mothers data.
- \* To make it easy for nurses to collect data.
- \* To improve the way of testing patient.

Who are the users of clinic files? This is the first step to requirement gathering is to identify the distinct groups of who will use the application and according to the requirement the main users for this system is the staff of the clinic.

### Findings

- The nurses have difficult to accessing data related to mothers and fetus after delivery the process of it slowly.
- The process of retrieving data is slowly and need more time and efforts to search for mother or fetus files.
- Registration mothers and fetus data in manual way is not efficiency.

### User requirement

User requirement have to be gathered from those who work in the Klinik Kesihatan jitra (staff and nurses).consequently, there was necessity of user requirement. Some of user requirement have to be considered due to they donate the main function in the health care system .the following are some condition:

1. Allows the user to access to the information any time from rural areas.
2. Allows the user to search for file and get the information about the patient.
3. Allows the user to add the information about the patient any time from rural

areas.

4. Allows the user to delete any information about the patient.

### Use Case Model

The use case model specifies the functionality the system has to offer from a user's perspective and we define what should take place inside the system. This model uses actors to represent roles the users can play, and use cases to represent what the users should be able to do with the system. Each use case is a complete course of events in the system, seen from a user perspective. If appropriate, interface descriptions may also be developed. These will specify in detail what the user interface will look like when the use cases are performed. To give a conceptual picture and a better understanding of the system, we use objects that represent occurrences in the problem domain. This model will serve as a common foundation for all the people involved in the requirement analysis, developers as well as customers. A use case is a specific way of using the system by performing some parts of the functionality. Each use case constitutes a complete course of events initiated by an actor and it specifies the interaction that takes place between an actor and the system. A use case is thus a special sequence of related transactions performed by an actor and the system in a dialogue. The collected use cases specify all the existing ways of using the system.

### Actors:

In order to decide what use cases are there in the system, we will identify the users of the system, who are called actors. The actor is a user type or category, and when a user does something he/she acts as an occurrence of this type. One person can instantiate several different actors. Actors thus define roles that users can play. The actors model anything that needs to exchange information with that system; therefore the actor can be a human user or anything that is external to the system. Based on the information requirement we have the following actors:

1. Clinic staff: the user of this system is the nurses and also the officer of the nurses.
2. The administrator is the nurses, officers.
3. The doctor cannot access this system because he doesn't go to the rural areas.

### Use-Case

After we have defined what is outside our system, we can define the functionality inside it. We are doing this by specifying the use-case. A use-case is a specific way of using the system by performing some part of the functionality. Each use-case constitutes a complete course of events initiated by an actor and it specifies the interaction that takes place between an actor and the system. A use-case is thus a special sequence of related transaction performed by an actor and the system in a dialogue. The collected use-case specifies all the existing ways of using the system. Interface description when describing the use-case and communication them to potential users. It is often appropriate to describe the interface in more detail. If it is a man-machine interface (MMI) we can use sketches of what the use will see on the screen when performing the Use - cases or provide more sophisticated simulations using a User interface management system (UMIS). In this way we can simulate the Use - cases, as they will appear to the users before even thinking about how to



realize them. We can thus liven up the use-case descriptions with real computer interaction by the potential users.

## VI. FINDINGS AND RESULTES

### Cases description

This is the Lunching Display will appear at the First step Just click on lunch button

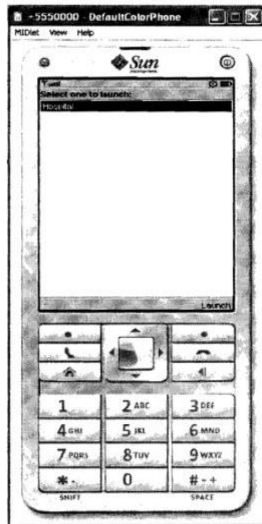


Figure 5.1: the lunch screen

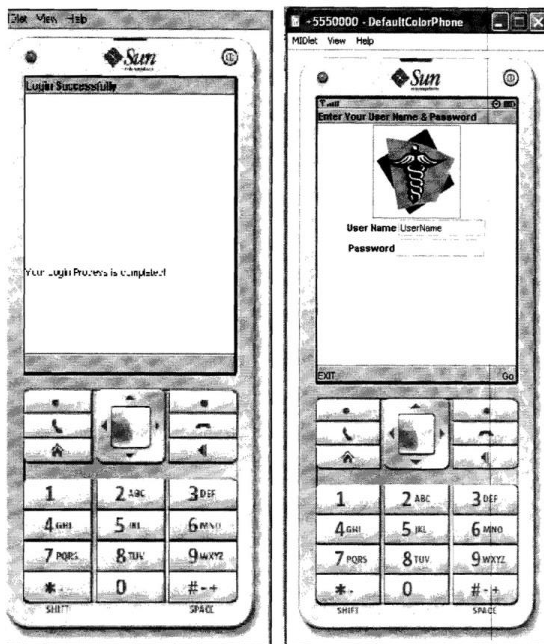


Figure 5.2: login screen

As we see in this application we use the Username & Password for more Security, where the Username refer to Offside & the Password refer to Off Sign in the Database. The Function we use it first need to make connection to Database by using WAP so we create Package called "Http Connection" this Package have Classes response to open URL "where the URL locate the Place of the Database" then we take the data in make Compare between the Text Field Data & the Data on the Database

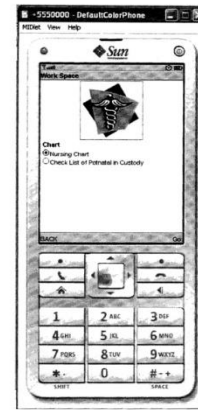


Figure 5.3: choose list

This Display we call it the work space where the Nurse or the Employer how is in response to add or to make update on the Patient tables. If we need to make change or update on the Mother Name or the Fetus we choose the Nursing chart Just select the first Choice button .

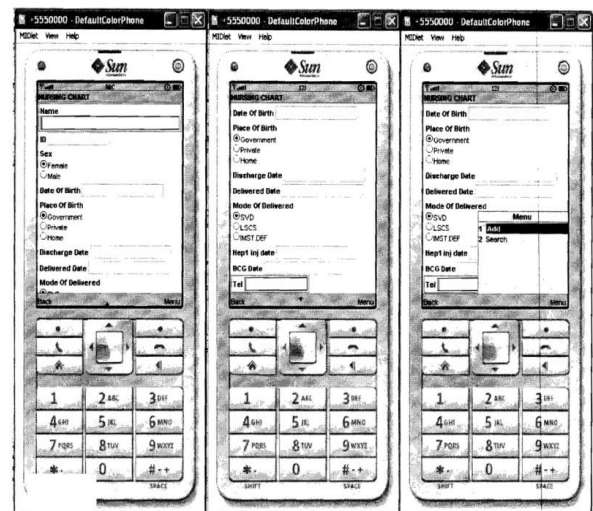


Figure (5.4) INSERT, ADDING, SEARCH INFORMATION

Now as we see the Nursing Chart appear in here we start to make search & update on in the database & its Contain 3 types of Items Text Field, Choice Group, Command. As we see its Normal Form as Forms in Oracle & this Form Connected with the Database .



Figure (5.5) IF INSERT CORRECT AND UN CORRECT

If the add not success well show this screen if not the other one and also we use in save and add and we can know by those screen if the process done or not.

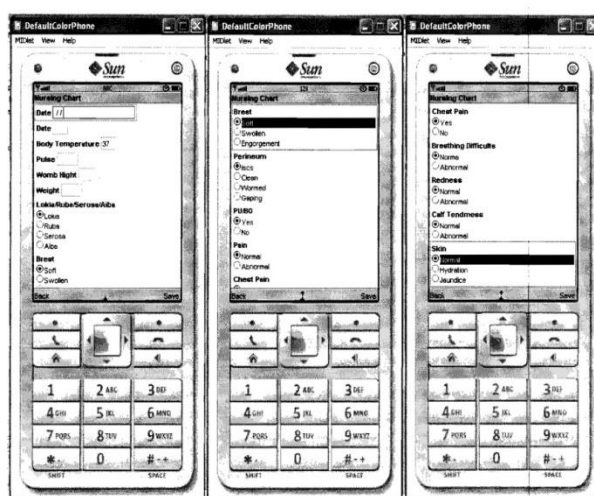


Figure (5, 6) insert in the second page

When we click on the Add the second Nursing Chart Will appear, in here we see that we concern on choice group & the Value that we use in the selected index will Change the data in DB.



Figure (5, 7) the result of search

After we select search and we put the password and user name this screen will appear and all text box full in side with info that the user need

### Testing Phase

This Section focuses on testing our healthcare in MPCB, and measure the performance for all functions that will be performed by the prospective application. The test included three benchmarks: Efficiency incorporates control the events, navigation and smoothing moves between pages of the MPCB. Effectiveness incorporates measuring the functionality, interacting MPCB and giving feedback to the user. Lastly, Satisfaction the user feels satisfied for the performance, and measuring visual clarity for contents of the MPCB. The questionnaire which was used in this research

project had been conducted by Gaffney to evaluate applications and web-businesses (Gaffney, 1998).

### Usability Testing

The testing process focuses on the logical internals of the software ensuring that all statements has been tested, and the functional externals that are conducting tests to ensure the defined inputs produce the actual results that agree with required result. I MPCB written into series of individual pages that should be directed to separate tests. MPCB is then tested as a whole; the separate web pages are brought together and tested as a complete application (Leventhal & Barnes, 2008). In order to evaluate the usability of MPCB prototype, usability testing was conducted and 13 users from Klinik Kesihatan Jitra. To perform this process, an emulator of mobile software has been used as tool to perform the test, so the emulator interacted with MPCB and the database server. All respondents were given a brief introduction about the survey and guideline was written to the respondent once the usability testing performed. When respondents were ready, they were treated with seven types of data provided in the usability testing to ensure benchmark of efficiency, satisfaction, and the effectiveness of MPCB: Navigation, functionality, control, and clarity used language, feedback, consistency, and visual clarity.

- **Navigation** was tested to ensure the accessibility of MPCB parts is possible and there are no constraints about it, and the moves between the pages are smooth and does not take long time, and ensure standard of efficiency is considered.
- **Functionality** was tested to ensure MPCB functions are executed at the call and the results of executing functions are complete, correct, and as expected. Control was tested to ensure that MPCB enables the user to perform processes or cancel them smoothly, facilitating the user with exit points in every page, and supporting the workflow of the user.
- **Clarity used language** was tested to ensure that the symbols and the language simple and very clear to the users and there is no complexity, and the shown messages are very clear to understand from the users.
- **Feedback** test was conducted to ensure the MPCB is smart and interacts with its user, to enable the user in awareness for what happening in the MPCB and nature of the functions that performed by the user.
- **Consistency** was tested to ensure the performance for MPCB parts are compatible with its functions, and there is no inconsistency in either the parts of MPCB such as titles of the pages, labeled functions, labeled the buttons and so on.
- **Visual clarity** was included in the test to ensure the layout for MPCB is clear and the user feels satisfied to use MPCB regarding to colors, forms, pictures, and places of displaying messages are accurate.

### Results of the usability testing

Navigation test of prototype is shown in table 1 and 2, which show, for question 1 there are 76.9% of the respondents said that all major parts of MPCB is accessible. Only 23% said moderate accessibility and no negative response. For question 2 there are 61.5 of the respondents said MPCB is easy to use, and search function is available. Only 38.5% said moderate efficiency. See chart: 1 and 2 in appendix B.

### Navigation Test

Table 1: Navigation Test (Q1)

	Frequency	Present	Valid present	Cumulative Present
Valid	10	76.9	76.9	76.9
1	3	23.1	23.1	100.0
2	13	100.0	100.0	
Total				

Table 2: Navigation Test (Q2)

	Frequency	Present	Valid present	Cumulative Present
Valid	8	61.5	61.5	61.5
1	5	38.5	38.5	100.0
2	13	100.0	100.0	
Total				

Functionality test of prototype is shown in table 3, 4 and 5 which show, for question 1 there are 61.5% of the respondents said that all functionality of MPCB is clearly labeled. 30.8% said moderate clearly labeled, and 7.7% said negative response. For question 2 there are 46.2 of the respondents said all necessary functionality is available. 52.8% said moderate availability and not negative value. For question 3 there are 38.5% of the respondents said there are no unnecessary functions. 23.1% said moderate positive responses, 23.1 said negative responses, and 15.4% said there are unnecessary functions in MPCB.

Table 3: functionality Test (Q1)

	Frequency	Present	Valid present	Cumulative Present
Valid	8	61.5	61.5	61.5
1	4	30.8	30.8	30.8
2	1	7.7	7.7	100.0
3	13	100.0	100.0	
Total				

Table 4 : functionality Test (Q2)

	Frequency	Present	Valid present	Cumulative Present
Valid	6	46.2	46.2	46.2
1	7	38.5	38.5	100.0
2	13	100.0	100.0	
Total				

Table 5: functionality Test (Q3)

	Frequency	Present	Valid present	Cumulative Present
Valid	5	38.5	38.5	38.5
1	3	23.1	23.1	61.5
2	3	23.1	23.1	84.6
3	2	15.4	15.4	100.0
4	13	100.0	100.0	
Total				

Control test of prototype is shown in table 6, 7, 8, 9 and 10, which show, for question 1 there are 30.8% of the respondents said that the user is able to cancel all operations if he/she would. 61.5% said moderate ability, and 7.7% said negative response. For question 2 received same value to question 1. For question 3 there are 53.8% of the respondents said there

are compatible between the contents with page size. 38.5% said moderate positive responses, and 7.7% said negative responses. For question 4 there are 53.8% said MPCB support the user's workflow. 46.2% said moderate supporting, and no negative responses. For question 5 there are in 38.5% out of the respondents said the inserted data MPCB server database is controlled. 61.5% said moderate controlled data, and no negative responses.

Table 6: Control test (Q.1)

	Frequency	Present	Valid present	Cumulative Present
Valid	4	30.8	30.8	30.8
1	8	61.5	61.5	92.3
2	1	7.7	7.7	100.0
3	13	100.0	100.0	
Total				

Table 7: Control test (Q.2)

	Frequency	Present	Valid present	Cumulative Present
Valid	4	30.8	30.8	30.8
1	8	61.5	61.5	92.3
2	1	7.7	7.7	100.0
3	13	100.0	100.0	
Total				

Table 8: Control test (Q3)

	Frequency	Present	Valid present	Cumulative Present
Valid	7	53.8	53.8	53.8
1	5	38.5	38.5	92.3
2	1	7.7	7.7	100.0
3	13	100.0	100.0	
Total				

Table 9: Control test (Q4)

	Frequency	Present	Valid present	Cumulative Present
Valid	7	53.8	53.8	53.8
1	6	46.2	46.2	100.0
2	13	100.0	100.0	
Total	13			

Table 10: Control test (Q5)

	Frequency	Present	Valid present	Cumulative Present
Valid	5	38.5	38.5	38.5
1	8	61.5	61.5	100.0
2	13	100.0	100.0	
Total				

Table 11: Clarity Used Language Control test (Q.1)

	Frequency	Present	Valid present	Cumulative Present
Valid	11	84.6	84.6	84.6
1	2	15.4	15.4	100.0
2	13	100.0	100.0	
Total				



Table 12: Clarity Used Language Control test (Q.2)

	Frequency	Present	Valid present	Cumulative Present
Valid	10	76.9	76.9	76.9
1	3	23.1	23.1	100.0
2	13	100.0	100.0	
Total				

Table 13: Clarity Used Language Control test (Q.3)

	Frequency	Present	Valid present	Cumulative Present
Valid	6	46.2	46.2	46.2
1	6	46.2	46.2	92.3
2	1	7.7	7.7	100.0
3	13	100.0	100.0	
Total				

Clarity Used Language test of prototype is shown in table 11, 12, and 13 which show, for question 1 there are 84.6% of the respondents said that the language used in MPCB is simple. Only 15.4% said moderate simple, and no negative responses. For question 2 there are 76.9% out of the respondents said the used symbols in MPCB are clear. 23.1% said moderate clarity. For question 3 there are 46.2% of the respondents said the error messages and executed operations are clear in MPCB 46.2% said moderate positive responses. Only 7.7% said negative responses.

Feedback test of prototype is shown in table 14, 15, 16, and 17, which show, for question 1 there 53.8% of the respondents said that it is clear what happens in MPCB. 38.5% said moderate clarity. Only 7.7% answered negatively responses. For question 2 there are 38.5% out of the respondents said the user can receive feedback afterward of executing operations. 61.5 said moderate receiving feedback, and no negative responses. For question 3 there are 30.8% of the respondents said the feedback is rom ted afterward of execution o eration. 61.5% said moderate ositive res onses, and 7.7% said negative responses.

Table 14: Feedback (Q.1)

	Frequency	Present	Valid present	Cumulative Present
Valid	7	53.8	53.8	53.8
1	5	38.5	38.5	92.3
2	1	7.7	7.7	100.0
3	13	100.0	100.0	
Total				

Table 15: Feedback (Q.2)

	Frequency	Present	Valid present	Cumulative Present
Valid	5	38.5	38.5	38.5
1	8	61.5	61.5	100.0
2	13	100.0	100.0	
3				
Total				

Table 16: Feedback (Q.3)

	Frequency	Present	Valid present	Cumulative Present
Valid	4	30.8	30.8	30.8
1	8	61.5	61.5	92.3
2	1	7.7	7.7	100.0
3	13	100.0	100.0	
Total				

Table 17: Feedback (Q.4)

	Frequency	Present	Valid present	Cumulative Present
Valid	4	30.8	30.8	30.8
1	9	69.2	69.2	92.3
2	13	100.0	100.0	100.0
Total				

Consistency test of prototype 1S shown 11I table 18 and 19 which show for question1 there are 38.5% of the respondents said that there is match between the links and their pages. 53.8% said moderate match. Only 7.7% said negative response. For question 2 there are 46.2% out of the respondents said error messages describe the necessary action.46.2% said moderate positive responses. Only 7.7% said negative response. See chart: 18 and 19 in appendix B.

Table 18: Consistency test (Q.1)

	Frequency	Present	Valid present	Cumulative Present
Valid	5	38.5	38.5	38.5
1	7	53.8	53.8	92.3
2	1	7.7	7.7	100.0
3	13	100.0	100.0	
Total				

Table 19: Consistency test (Q.2)

	Frequency	Present	Valid present	Cumulative Present
Valid	6	46.2	46.2	46.2
1	6	46.2	46.2	92.3
2	1	7.7	7.7	100.0
3	13	100.0	100.0	
Total				

Visual Clarity test of prototype is shown in table 20, 21, and 22. For question 1 there are 53.8% of the respondents said that the layout of MPCB is clear. 38.5% said moderate clarity. Only 7.7% said negative responses. For question 2 there are 38.5% out of the respondents said there are sufficient white space. 53.8% said moderate sufficiency. Only 7.7% said negative responses. For question 3 there are 46.2% of the th respondents said the color of links, buttons, and textbox titles are acceptable and clear. 46.2% said moderate clarity. Only 7.7% said negative responses. See the charts: 11,12, and 13 1n appendix B.

**Table 20: Visual Clarity test (Q.1)**

	Frequency	Present	Valid present	Cumulative Present
Valid	7	53.8	53.8	53.8
1	5	38.5	38.5	92.3
2	1	7.7	7.7	100.0
3	13	100.0	100.0	
Total				

**Table 21: Visual Clarity test (Q.2)**

	Frequency	Present	Valid present	Cumulative Present
Valid	5	38.5	38.5	38.5
1	7	53.8	53.8	92.3
2	1	7.7	7.7	100.0
3	13	100.0	100.0	
Total				

**Table 22: Visual Clarity test (Q.3)**

	Frequency	Present	Valid present	Cumulative Present
Valid	6	46.2	46.2	46.2
1	6	46.2	46.2	
2	1	7.7	7.7	92.3
3	13	100.0	100.0	100.0
Total				

To sum up, the findings of usability testing was collected based two phases: firstly practical part, which the respondent performed test for all parts of MPCB prototype and executed the prospective functions of MPCB, lastly assessed the aspects of 5' system. For this phase the aim to examine typically three main benchmarks: the satisfaction of user, measure the efficiency of MPCB and ensure the effectiveness for this application. Second phase is conducting questionnaire to articulate the user evaluation by answering the questions. In table 23, included the number of respondent that correspond to each of the evaluation scale.

**Table 23 : The total that mean the requirement meet the out put.**

Q	QUESTIONS	Strongly agree	Agree	Disagree	Strongly disagree
1	All major parts of the (MPCB) are accessible	10	3	0	0
2	(MPCB) easy to use ,and search function is available	8	5	0	0
3	All functionality is clearly labeled	8	4	1	0
4	All necessary functionality is available	6	7	0	0
5	There are no unnecessary functions or buttons are used	5	3	3	2
6	The user can cancel all operations	5	8	0	0

7	There is an exit point on every page	4	4	1	4
8	The contents are compatible with page	7	5	1	0
9	MPCB supports the user's work flow	6	7	0	0
10	The data which is inserted to MPCB database is controlled	5	8	0	0
11	The language used is simple	11	2	0	0
12	Symbols are used are clear	10	3	0	0
13	The messages for indications of errors executed operation are clear	6	6	1	0
14	It is always clear what is happening on the MPCB	7	5	1	0
15	User can receive feedback afterward of execution operations	5	8	0	0
16	All feedback is prompt	4	8	1	0
17	User are informed if browser version is required	5	8	0	0
18	Links match titles of the pages to which they refer	5	7	1	0
19	Error message describe what action is necessary	7	5	1	0
20	The layout is clear	7	4	2	
21	There is sufficient "white space"	5	7	1	0
22	The color of links , buttons and textbox titles are acceptable and clear	6	6	1	0
Total		87.9%	67.14 %	9.28%	3.7%

## VII. CONCLUSION AND RECOMMENDATIONS

### Conclusion

The use of information technology to facilitate communications and collaborations ' plays vital role to make the performance more efficient and accurate, and in the same time become main theme n information systems emerging technologies, such as E- service and m-service offer the actual



improve the way in which people perform their duties effectively and rapidly. The main goal of this project to develop health care system by using Wireless Application Protocol (WAP), which has been achieved. In the meantime the prototype has been used by the user to evaluate the system usability in which has been accomplished through duration of project, which has taken 4 months and half. The development of the project based on Object-Oriented System development Life Cycle approach, and takes UML as the modeling system while the development of the system using JAVA SUN.

### Recommendations

In order to develop a good application and enhance the features of MPCB it is recommended that developers should consider few things. Firstly, it is advisable that the application requirements should be treated and maintained in the consistency way. It is strongly recommended the interface of MPCB works constantly. It is not recommended to touch or changing code structure of MPCB, any updating or changing will affect on the performance negatively and disabling the functions of MHCR.

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